was cochlear dysfunction at 10,000 Hz frequency based on DPOAE examination each frequency after administering kanamycin injections.

ABSTRACT

COCHLEAR DYSFUNCTION POST TREATMENT WITH KANAMYSIN INJECTION IN MULTIDRUGS RESISTANT TUBERCULOSIS PATIENTS

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Objectives : Long-term exposure to aminoglycosides like kanamysin to cochlear cells is known to be associated with damage to outer hair cells in the corti organ and type 1 sensory hair cells in the vestibular organs which ultimately causes permanent damage to hair cells. Hair cell damage occurs from the basal cochlea (high frequency area) to the cochlear apex (low frequency area) and is followed by damage from the auditory nerve. Ototoxic drugs are defined as drugs that have the potential to cause toxic reactions to structures in the inner ear such as the cochlea, vestibule, semicircular canal and otolites. Damage to this structure can provide symptoms of hearing loss, tinnitus, and also balance disorders. Evaluation of cochlea dysfunction on MDR TB patients have rarely been reported in the literature based on DPOAE. The aim of this study was to prove ototoxic effects of cochlea dysfunction after kanamisin injection based on DPOAE examination. **Methods :** This study was conducted in the Pulmonology infection division of MDR TB Outpatients Department of Dr. Soetomo general hospital Surabaya and Community division of ORL-HNS Dr. Soetomo general hospital Surabaya. This study was included in observational analytic research with *pre* and *post* design without control group. Samples were taken by consecutive sampling. All samples were analyzed descriptively to get basic research data. Stastic analysis to cochlea dysfunction based on DPOAE examination in MDR TB patients using Mc Nemar test. **Result :** There were 15 samples with the best baseline examination that met the study criteria. The sample age range is 17 - 60 years, with an average age of 39 years. Ratio between men and women 1 : 1.14. Based on DPOAE baseline correlation results of all frequencies in 15 ears of MDR TB patients were obtained with 15 ears with the results of the pass, after administering kanamycin injections, 4 ears were obtained as a refer. Changes of the DPOAE results for each frequency show from 14 ears that pass 9 ears to refer to the frequency of 10,000 Hz. The DPOAE result showed significant statistical difference. A significant difference was found at a frequency of 10.000 Hz ($p = 0,002$). The results of DPOAE examination were found as many as ear result of refer and ear result pass. **Conclusion :** There was no cochlear dysfunction based on DPOAE examination on correlation of all frequency after administer kanamycin injection, but there was cochlear dysfunction based on DPOAE examination at frequency 10.000 Hz.

Keywords : Cochlear dysfunction**,** DPOAE, kanamycin, multidrugs resistant tubeculosis